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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,932	02/17/2004	Kun-Hong Chen	250122-1220	1914
24504	7590	09/08/2005	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP			CHU, CHRIS C	
100 GALLERIA PARKWAY, NW			ART UNIT	
STE 1750			PAPER NUMBER	
ATLANTA, GA 30339-5948			2815	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/780,932

Applicant(s)

CHEN, KUN-HONG

Examiner

Chris C. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on June 27, 2005 has been received and entered in the case.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 8 are rejected under 35 U.S.C. 102(b) as being anticipated by the acknowledged prior art of Figs. 1 – 2E.

Regarding claim 1, the acknowledged prior art discloses in e.g., Fig. 2E an interconnect structure, comprising:

- a substrate (100; page 2, line 15);
- a plurality of first metal lines (110; page 2, line 12 and see Fig. 1) disposed on the substrate;
- a first insulating layer (120; page 2, line 28) disposed on the substrate, covering the plurality of first metal lines (see e.g., Fig. 1 and Fig. 2E);
- a plurality of second metal lines (130; page 2, line 13 and see Fig. 1) disposed on the first insulating layer;

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- a second insulating layer (140; page 3, line 4) covering the plurality of second metal lines;
- a plurality of ITO (indium tin oxide 162; page 2, line 17 and see Fig. 1) wirings electrically connecting the plurality of first and second metal lines (see Fig. 2E) respectively; and
- a passivation structure (151 and 152; page 2, lines 17 and 18) disposed on the second insulating layer with a plurality of openings (the openings between the elements 151 and 152; see e.g., Fig. 1);
- wherein each ITO wiring (indium tin oxide 162) is isolated and enclosed by each opening (the openings between the elements 151 and 152; see Fig. 1 and Fig. 2E) of the passivation structure (151 and 152) respectively (see e.g., Fig. 1 and Fig. 2E).

Regarding claim 2, the acknowledged prior art discloses in e.g., Fig. 2E the substrate (100) being a TFT-array substrate (page 2, line 15) for a flat display panel (page 1, line 7).

Regarding claim 3, the acknowledged prior art discloses in e.g., Fig. 2E the plurality of first (110) and second (130) metal lines, the plurality of ITO wirings (162) and the passivation structure (151 and 152) being disposed in a non-display area of the TFT-array substrate (page 2, lines 6 and 7).

Regarding claim 4, the acknowledged prior art discloses in e.g., Fig. 2E the plurality of first metal lines (110) being gate metal lines formed simultaneously with gate metal lines in a display area of the TFT-array substrate (page 2, lines 25 – 27).

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Regarding claim 5, the acknowledged prior art discloses in e.g., Fig. 2E the plurality of second metal lines (130) being a source/drain metal lines that are formed simultaneously with source/drain metal lines on a display area of the TFT-array substrate (page 3, lines 1 – 4).

Regarding claim 6, the acknowledged prior art discloses in e.g., Fig. 2E each of the ITO wirings (162) comprising a first ITO electrode disposed in the first and second insulating layers (120 and 140) in contact with each of the first metal lines (110), a second ITO electrode disposed in the second insulating layer (140) in contact with each of the second metal lines (130), and an ITO layer (162) connecting the first and second ITO electrodes (see Fig. 2E).

Regarding claim 7, the acknowledged prior art discloses in e.g., Fig. 2C the thickness of the passivation structure (151 and 152) being between 3 and 4 μ m (3.5 μ m; page 3, lines 29 and 130).

Regarding claim 8, the acknowledged prior art discloses in e.g., Fig. 1 the opening (at the opening between the elements 151 and 152) in the passivation structure (151 and 152) including rectangle (since the opening area between the elements 151 and 152 in Fig. 1 has a rectangle shape, the opening area includes rectangle).

Response to Arguments

4. Applicant's arguments filed on June 27, 2005 have been fully considered but they are not persuasive.

Applicant argues that the acknowledge prior art does not disclose each ITO wiring being isolated and enclosed by each opening of the passivation structure respectively. This argument is not persuasive because the acknowledge prior art disclose each ITO wiring (indium tin oxide

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162) being isolated and enclosed by each opening (the openings between the elements 151 and 152; see Fig. 1 and Fig. 2E) of the passivation structure (151 and 152) respectively (see e.g., Fig. 1, Fig. 2E and paragraph three of this Office action for details).

For the above reasons, the rejection is maintained.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is 571-272-1724. The examiner can normally be reached on 11:30 - 8:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 517-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chris C. Chu
Examiner
Art Unit 2815

c.c.
Tuesday, August 30, 2005


TOM THOMAS
SUPERVISORY PATENT EXAMINER